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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,552	04/19/2001	Hisashi Ohtani	0756-2296	7555

22204 7590 07/16/2003

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EXAMINER

RICHARDS, N DREW

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,552

Applicant(s)

OHTANI ET AL.

Examiner

N. Drew Richards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-41, 45, 47, 48 and 55-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-40 and 55-63 is/are allowed.
- 6) ☒ Claim(s) 41, 45, 47 and 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 November 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 41 is objected to because of the following informalities:

Claim 41 recites "has a structure that each of active layers is sandwiched by each of first wiring lines and each of second wiring lines through each of insulating layers" in lines 4-6. This wording is objected to as including improper grammar that, though still definite, makes the claim difficult to understand. It is suggested that the claim be amended to read (starting on line 3) "wherein each of a pixel TFT included in the pixel matrix circuit and an n-channel TFT included in the driver circuit has a structure including an active layer sandwiched by each of a first wiring line and a second wiring line through insulating layers;". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 47 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 47 and 48 are multiple dependent claims that both depend from any one of claims 28 to 43 and 45. Claims 42 and 43 are cancelled, thus claims 47 and 48 are indefinite as it is unclear how they can depend from cancelled claims 42 and 43.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 41 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 6225150 B1) in view of Vu et al. (U.S. Patent No. 5702963).

Lee et al. teach a semiconductor device having a pixel matrix circuit and a driver circuit formed on the same substrate in figure 3j and the accompanying description in the specification. As seen in figure 3j, Lee et al. teach a pixel TFT in the pixel matrix circuit and an n-channel TFT included in the driver circuit having an active layer and a first wiring line with an insulating layer there between. Lee et al. do not disclose the TFT's having an active layer sandwiched by a first wiring line and a second wiring line through insulating layers. Vu et al. teach high density TFT's to be used in LCD's. Vu et al. teach in figure 15G the TFT's having an active layer sandwiched by a first wiring line G1 and a second wiring line G2 through insulating layers.

The limitation of the first wiring line of the pixel TFT kept at a fixed electric potential or a floating electric potential and the first wiring line of the n-channel TFT included in the driver circuit kept at a same level of potential as the second wiring line of the n-channel TFT included in the driver circuit are intended use limitations that do not

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structurally distinguish over the prior art. The device of Lee et al. as combined with Vu et al. is capable of having the claimed electric potentials applied to the first and second wiring line and thus reads on the claim.

Lee et al. and Vu et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to form the TFT's with a first and second wiring line sandwiching the active region through insulating layers. The motivation for doing so is increase the drive current of the transistors. Therefore, it would have been obvious to combine Lee et al. with Vu et al. to obtain the invention of claim 41.

With regard to claim 45, Lee et al. with Vu et al. teach the first or second wiring line is a conductive film mainly containing an element selected from the group consisting of tantalum, titanium, tungsten, molybdenum, and silicon, or an alloy film or silicide film containing the elements in combination.

Allowable Subject Matter

6. Claims 28-40 and 55-63 are allowed.

Response to Arguments

7. Applicant's arguments filed 5/30/03 have been fully considered but they are not persuasive. Applicant argues that Vu et al. does not teach forming the entire active matrix display (pixel matrix circuit and driver circuit) on a single substrate and that Vu et al. teach unacceptable product yields and quality problems when formed on a single

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substrate. This is not persuasive. First, Lee et al. teach forming the pixel matrix circuit and the driver circuit on the same substrate, so the limitation is taught by the references. Second, Vu et al. does teach forming the entire active matrix display on a single substrate as seen in figure 1 where the entire active matrix display is on substrate 13. Vu et al. teaches forming this product by transferring circuit modules to a substrate after the modules have been formed. Third, the limitation in the claim is "a pixel matrix circuit and a driver circuit that are formed on a same substrate". The claim is directed towards a device, not a method. Thus, the references need only teach a final product of having all the claimed TFT's on the same substrate, they need not have been originally formed on the substrate. This final structure is taught by the references.

Applicant also argues that the applied potentials claimed are not a method of operation limitation but provides a definitive structure. First, the limitations are "intended use limitations" not method of use limitations as the claims are drawn toward a product, not a method of use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In this case the limitation is considered an intended use limitation that does not structurally distinguish over the prior art.

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Further, applicant states that the TFT having the **same structure** are formed on the same substrate and have either the GOLD structure or the LDD structure (Page 10 lines 4-6 of applicant's response). Applicant then describes the different effects of applying different potentials to the same structure. Applicant does not point out a structural difference between resulting from the application of different potentials but merely an electrical difference in the operation of the device. Thus, the examiner still holds that the applied potentials as claimed do not result in a structural difference and the claims read on the prior art.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

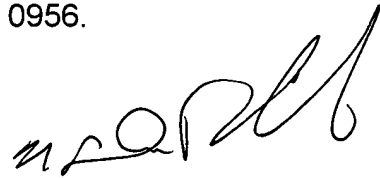
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (703) 306-5946. The examiner can normally be reached on M-F 8:00-5:30; Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



NDR
July 11, 2003



EDDIE LEE
SUPERVISORY PATENT EXAMINER
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